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AUTHOR Thomas, Constance D.; And Others
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ABSTRACT

A study was conducted to identify areas of teacher and program needs in the state of Tennessee in order to plan for the future. Five secondary school systems were selected from each of the seven developmental districts in the state, for a total sample of 35 representative systems. From these 35 systems, 419 (of 587) vocational personnel completed a mailed questionnaire. Demographic data as well as information about teachers' educational status and long-range professional development goals were obtained. Additionally, information was obtained regarding the teachers' workloads, the makeup of the students served, and class size. Secondary teachers also rated the importance of 19 skills they needed to improve their instruction. The study found that 35 percent of the teachers plan to retire within the next 5 years. About 25 percent of the teachers had no lesson planning period, and about one-half of the secondary vocational teachers are teaching 1-hour exploratory programs only, showing that Tennessee's vocational education program is becoming exploratory as opposed to job preparatory. Several skills that would help vocational teachers were identified (motivating/disciplining students, assessing student interest, helping with career development updating technical skills, and acquiring computer skills) and should be incorporated into teacher education program, the study concluded. (18 references.) (Author/KC)

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RESEARCH IN TENNESSEE SECONDARY VOCATIONAL- TECHNICAL EDUCATION

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TENNESSEE VOCATIONAL TEACHER NEEDS ASSESSMENT

OFFICE OF RESEARCH
DEPARTMENT OF TECHNOLOGICAL
AND ADULT EDUCATION
402 CLAXTON ADDITION
THE UNIVERSITY OF TENNESSEE
KNOXVILLE 37996

Constance D. Thomas
Roger Haskell
Don E. McNelly

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NEEDS ASSESSMENT

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June, 1989

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Principal Investigators: Ms. Constance Thomas
 Dr. Roger Haskell
 Dr. Don McNelly

The opinions expressed herein do not necessarily reflect the policies, position, or opinion of the Tennessee Department of Education, The University of Tennessee or the Department of Technological and Adult Education.

PREFACE

Several individuals have made significant contributions to this research series. Special recognition is hereby extended to the State Staff. Mr. Marvin Flatt, Assistant Commissioner for Vocational-Technical Education, Tennessee State Department of Education, Mr. Russell Smith, Administrative Assistant and Director of Field Services, and Mr. Jim Vinson, Director of Program Planning and Development were each instrumental in initiating this research. Special recognition also is extended to Dr. Gerald Cheek, Professor and Chairperson for the Department of Technological and Adult Education, University of Tennessee - Knoxville for technical advice and Departmental support for graduate assistants to help conduct the studies. These research projects would not have been possible without their support and assistance. Appreciation is extended, in particular, to the secondary vocational teachers and administrators in the Jefferson County school system for their assistance with the pilot testing of the survey instrument used for this study. They were very helpful. Also, thanks is extended to the many vocational administrators who assisted by providing primary information or lists of names and addresses for securing information.

Initially, seventeen potential research topics were gleaned from the Carl D. Perkins Vocational Education Act as being areas of interest for vocational education. The State Staff identified six topics for first year priority. The research was conducted through the State Vocational Program Evaluation Project with various UTK professors and graduate assistants invited to participate. The studies were conducted in order to secure information of interest and use by the State Staff. Restrictions were placed on each study with respect to the funding made available. The scope of each study was confined to operate within these budgeting constraints. No graduate student used the data for dissertation or thesis purposes.

This research report should provide vital information to policy makers and planners to assist them in their continuing efforts to provide quality vocational-technical education for all secondary students in the State.

Don E. McNelly
Director
State Secondary Vocational
Program Evaluation Project

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EXECUTIVE SUMMARY

Currently there is a serious void in the information available regarding the program and professional development needs of secondary vocational teachers in Tennessee as well as the problems they face as they attempt to deliver quality instruction to students. This void creates serious problems for those charged with the responsibility of statewide long-range planning, planning future inservice programs, establishing certification requirements, and providing upgrading experiences for teachers. Due to the lack of such information, this study was conducted.

The purpose of this study was to identify areas of teacher and program needs in the State of Tennessee in order to strategically plan for the future. Five secondary school systems were selected from each of the seven developmental districts in the state for a total sample of 35 representative systems. From these 35 systems, a total of 419 vocational personnel participated by completing and returning the questionnaire.

Demographic information obtained from respondents included their age, teaching experience and retirement plans. Information was also obtained regarding secondary vocational teachers' current educational status as well as their long-range professional development goals.

Additionally, information was obtained regarding the teachers' work loads, the makeup of the students served (sex and number of handicapped and disadvantaged), and the instructors' average class size. Assessment was also made regarding the prevalence of planning periods for teachers and the nature of their instructional schedules.

Secondary teachers also responded to a skills inventory by rating the importance of 19 different skills. In each case, teachers identified which skills they needed most in order to improve their instruction. Personal

development activities of secondary vocational teachers were identified.

The following findings and recommendations emerged from this study. Thirty-five percent of the teachers plan to retire within the next 5 years although only 5% of the teachers will reach retirement age during that period.

While the majority of teachers had a planning period in which to prepare for their teaching, a sizable percentage (better than 25%) had no allocated planning period. Since quality instruction requires planning, steps should be taken to remedy this situation.

Handicapped and disadvantaged students are being served by vocational teachers but teachers are provided with little or no help and few have received any specialized training. Steps should be taken to rectify this situation. Nearly one half of the secondary vocational teachers are teaching one-hour exploratory programs only and better than 21% of the T&I and Health Occupations teachers' time is spent teaching one-hour classes. Thus, increasingly, vocational education in Tennessee is becoming exploratory as opposed to job preparatory. In many cases facilities are inadequately equipped and teachers are ill-prepared for this type of delivery system. Vocational education must not lose its emphasis on preparing students for the job market.

Additionally, several skill areas which could help the vocational teachers do their job better were identified. Such skills should be incorporated into teacher's preparatory programs.

Finally, a majority of secondary vocational teachers responded very positively to the new Tennessee curriculum guides and indicate that the guides have improved the quality of their programs.

INTRODUCTION

In a time of drastic change, it is the learners who inherit the future. The learned find themselves equipped to live only in a world that no longer exists.

Eric Hoffer

The changes to which we bear witness in the world today are sufficient in scope and breadth to solicit a response from the learned calling for a new perceptual framework through which to view the role of secondary vocational education. We are living in a unique, dynamic age. There has been a dramatic explosion of information and technology followed by demands from the private sector challenging the traditional public education system and voicing expectations of altering the preparation of students for the future. Dilemmas of relevance abound.

In responding to the challenge, secondary vocational educators play a unique and essential role -- limited only by their imagination and creativity. The state of Tennessee, in an effort to assess the impact of changing demographics, technological advances, and educational reform on secondary vocational education, has sought information from those individuals in the forefront of the field -- the secondary vocational teachers. The perceptions of these teachers have provided critical information upon which to build flexible, systematic, and strategic plans for improving secondary vocational education and meeting the evolving educational needs of secondary students. This information is invaluable in establishing baseline data pertaining to teaching credentials in the field, professional development attitudes, teaching load (to include handicapped and disadvantaged), and identification of other teacher/program needs. The

state staff will then be better able to prioritize statewide needs. This pertinent information will facilitate both short and long range planning.

Statement of the Problem

Currently there is a serious void in the information available regarding the program and professional development needs of secondary vocational teachers in Tennessee as well as the problems they face as they attempt to deliver quality instruction to students. This void creates serious problems for those charged with the responsibility of planning future inservice programs, establishing certification requirements, and providing upgrading experiences for teachers. It also hampers efforts to provide long-range statewide direction for secondary vocational programs.

Purpose of the Study

Secondary vocational educators and administrators must respond to present demands and, simultaneously, anticipate the future--certainly not an easy task! A revitalized system will play a crucial role in America's transition into a new age. Specifically, the purpose of this study was to identify and establish areas of teacher and program needs in the State of Tennessee in order to strategically plan future transitional responses to satisfy these needs.

Limitations of the Study

This is a descriptive study and, consequently, subject to all weaknesses of such studies. Due to limited available funds to undertake the study, a purposive sample was used. Since the survey was conducted by mail, the questions were interpreted by the vocational teachers with no possibility of clarifying any misconceptions. Finally, even though the sample was purposive and participating systems were selected at random, care should be

taken in generalizing to other populations which might have special training needs and problems.

CONTEXT FOR THE STUDY

A composite forecast of the demographic and economic structure of the current vocational system in this country was published under the title The Strategic Context of Education in America--1985 to 1995. In order to effectively adapt to change, the report argues, it will be necessary to assume important new functions which will entail significant innovations and which will challenge conventional thinking (Snyder, 1987). How vocational teachers perceive technology and their preparation to use the particular aspects which pertain to their discipline to instruct, manage, and evaluate student progress are critical to the future of vocational education (Glenn & Carrier, 1989).

The Senate Education Subcommittee hearings held in June, 1989 on the reauthorization of the Carl D. Perkins Vocational Education Act revealed five priorities:

1. Funds should be targeted on the economically disadvantaged;
2. Secondary and post-secondary vocational education should be linked through 2 + 2 arrangements;
3. Secondary vocational education students should be provided with the best academic preparation possible, closely tied to vocational training;
4. Vocational courses must be current, state-of-the-art programs; and
5. Congress must not lose sight of the fact that education is the co-equal partner in this endeavor.

Additionally, when AVA President Donald Bright addressed the Subcommittee on reauthorization, he urged them to support systematic improvement of the

Perkins Vocational Education Act rather than another major reform following that of 1984.

Indeed, if adequate vocational preparation is a key to future economic development in this country, and if responsible vocational educators are to provide a transition for students from the classroom to the workplace, this study is timely. The comprehensive, strategic approach is imperative. In the face of uncertainty in vocational education, Tennessee is committed to creating a process which will provide direction for the future, thereby helping to ensure the best use of federal and state funds in the education of youth in the state.

REVIEW OF RELATED LITERATURE

Politicians, educators, philosophers, parents, school administrators, and a host of other concerned Americans have called for a systematic examination of the role, purpose, and scope of vocational education within the secondary school system. Questions of the basic underpinnings of the theory and practice of teaching job-specific skills must be dealt with:

- * What should secondary vocational education programs do for students?
- * What should the combined vocational program offer society?
- * How is the nature and content of the curriculum derived in the process?
- * Are secondary vocational instructors' needs being met in order to provide a relevant student experience?

These questions cannot be answered flippantly or hastily. In addition to requiring a fundamental understanding of the multitude of issues involved, key questions must constantly be asked and increasing attention

paid to the needs of the frontline implementers of policy and practice--the secondary vocational education teachers.

The Carl D. Perkins Vocational Education Act has challenged and encouraged state and local governments and school systems to expand, improve, develop, update, and deliver high quality vocational education programs at the secondary level (United States Congress, 1984). Parents, students, teachers, and the nation as a whole are concerned over the quality and contribution of vocational education to the society at large (Brown, 1984). The State of Tennessee, in light of this perspective, has adopted several plans of action to look for ways of improving the accountability of vocational education with available time, personnel, and other resources. This literature review has been developed within this context.

Vocational Teacher Certification and Professional Development.

Many states have instituted assessment programs for vocational teachers as a requirement for initial certification. As of 1987, 43 states were in various stages of planning and/or implementing vocational teacher competency tests (Education Commission of the States, 1987). Proponents of such entrance examinations claim that mastery of basic academic skills such as reading, writing, and mathematics is fundamental to effective teaching at all grade levels and in every program area (Lehmann & Phillips, 1987).

A recent study in which mandated basic skills competency testing of non-degreed trade and industrial education teachers was conducted in Connecticut. Findings from this study suggested that these instructors will have difficulty passing the requirements. Seventy-five percent of the T&I teachers initially failed the test. Moreover, 15% of those who failed

never retook the test and only 50% of those who did retake the test ultimately passed (Connecticut State Department of Education, 1987). The authors estimated that without intervention, the basic skills examination would result in a 45% reduction in the supply of T&I teachers in that state.

Other states which have faced similar problems are addressing them in one of three ways:

1. By developing alternative certification regulations for non-degreed teachers;
2. By taking remedial steps to decrease the failure rate of non-degreed teachers; or
3. By lowering vocational teacher certification standards.

Arguing for lowered standards in light of the national concern about basic skills instruction and the role of vocational education in general would seem shortsighted. There have been renewed calls for efficiency, increased academic requirements for graduation, more and more pressure for young people to attend college, and dramatically decreased legislative interest in and support for vocational education (Asche, 1987). Clearly, the former two alternatives offer more promise.

Recently, the Southern Regional Education Board, State Vocational Education Consortium, supported stronger emphasis on putting the basics into vocational contexts. Nearly \$2 million will be invested to improve instructional programs that (1) teach vocational content in ways that strengthen basic competencies and (2) assist mathematics, science, and communications teachers to incorporate application in their instruction (Dronka, 1988).

Each major portion of the Perkins Act refers to the need to improve instruction in vocational programs under that particular segment of the Act, placing emphasis on teacher preparation and professional development activities as vehicles for bringing about those improvements. The results of a recent study by Weber, Puelo, Kurth, Fisch, and Schaffner (1988), indicated that vocational teachers in comprehensive high schools generally complete more years of formal education than those in area vocational or vocational specialty schools. This study also indicated these teachers tended to have more years of teaching experience and received more inservice training in handling gifted, handicapped, and disadvantaged students. These same teachers, however, reported spending fewer hours per week on obtaining additional professional training and on updating/improving their technical skills. They also reported receiving significantly less inservice training for teaching students who are enrolled in classes which are nontraditional for their sex when compared with their counterparts who teach in specialty vocational schools.

Working With the Handicapped/Disadvantaged Student.

A recent report from the Committee for Economic Development has proposed three investment strategies for the educationally disadvantaged student. These efforts--prevention through early intervention, restructuring the foundation of education, and revising retention/re-entry support--should be considered basic elements of vocational program improvement. Troy (1988) expanded that assessment with four points:

1. Top priority should be given to the equitable distribution of technology in the schools.

2. Attention should be given to those "at risk" students in rural areas.
3. Creative partnerships to serve individual learners should be formed;
and
4. Enhancing the learning environment around inner-city schools should
be compulsory.

Teaching Basic Skills Within Subject Matter Area.

The National Commission on Vocational Education (1984) concluded that progressive secondary schools must offer students the opportunity to achieve intellectual, social, and personal skills as well as vocational skills. The development of effective work habits, communication skills, and problem-solving abilities should become a basic objective in order for a graduate to compete in the workplace (Greenan & McCabe, 1989).

Karplus (1980), Sternberg (1986), and Adler (1986) all have argued that the deliberate teaching of reasoning, critical thinking, and problem-solving should be a primary thrust in educational settings. Logic (reasoning), mathematics, communication skills, and developing interpersonal relationships have been identified by Greenan (1983) as the four major generalizable skills which should be basic to vocational education programs and unquestionably necessary for later success on the job.

The Future of Technology.

A review of the Industrial Teacher Education Directory (Dennis, 1988) revealed that during the period from 1979 to 1988 a total of 30 technology teacher education programs were terminated. If this trend continues the resulting educational system will be in a poor position to provide practical application of otherwise abstract general education concepts.

Oaks and Leopp (1989) further stated that closing the nation's technology teacher education programs is shortsighted and counterproductive to the technology literacy effort in general. Citing a need to become proactive and forming strong coalitions to work with state legislators, university administrators, teacher associations, and private business/industry representatives, Oaks and Leopp warned that the teaching enterprise must guard against being ill-prepared to meet society's technological education needs.

METHODOLOGY

Population and Sample

The population for this study was the secondary vocational teachers in the state of Tennessee. A purposive sample was selected due to the limited funds available to conduct the study. Five secondary systems were chosen from each of the seven developmental districts in the state for a total sample of 35 representative systems. From these 35 systems, a total of 419 vocational instructors participated. All vocational program content areas were represented.

Instrumentation and Data Collection

The survey instrument (Appendix A) was developed based upon an intensive literature review, interviews with vocational teachers currently employed in the profession, and by the principal investigators. Questions were designed to depict various relevant, logical paths by which vocational teachers choose to remain competent practicing individuals both in their area of expertise as craftspersons and as professional instructors. The face validity of the questionnaire was established through agreement of an advisory group of professional educators. The resulting final instrument

was pilot tested in the Jefferson County school system to determine if the instrument was sufficiently reliable and valid to identify and measure vocational teacher needs to improve programs over the next five-year period. The final instrument consisted of five pages of current information containing pertinent personal/demographic data, courses for technical skills updating and career advancement plans, and assessment of the curriculum guides now in place.

The data were collected by mail distribution to each identified system's vocational director with a request that s/he hold a brief meeting with the vocational staff to explain the purpose and importance of the study.

Questionnaires were distributed and teachers were instructed to respond at their convenience, seal their completed questionnaires in the envelope provided to assure anonymity, and to return the survey instrument to the evaluation team headquarters at the University of Tennessee, Knoxville for analysis.

Data Analysis

The results depicted in this document are based upon data from the teachers in the thirty-five selected systems. The database generated as a part of this study contains pertinent demographic, educational preparation, and current technical information gleaned from the aforementioned teachers. The data were analyzed by the Statistical Analyses System (SAS) at the computer center of the University of Tennessee, Knoxville.

FINDINGS

Table 1 provides a breakdown of the rate of participation by the various districts. As the Table indicates, the total rate of participation was 71.7%. The questionnaire return rate among the seven developmental 71.7%.

The questionnaire return rate among the seven developmental districts ranged from a low of 57% to a high of 95%.

Table 1
Vocational Teacher Rate of Participation

District	System	No. Programs in System	Returns	Percent Participation
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First Tennessee

11	14	9	64.3
12	12	12	100.0
13	57	24	42.1
14	53	32	60.4
15	<u>7</u>	<u>6</u>	85.7

Total Eligible: 143 84
District Participation Rate 58.7%

East Tennessee

21	(22)	(22)	100.0
22	12	12	100.0
23	15	15	100.0
24	24	20	83.3
25	<u>22</u>	<u>22</u>	100.0

Total Eligible: 73 69
District Participation Rate 94.5%

Upper Cumberland

31	13	11	84.6
32	5	5	100.0
33	28	5	17.9
34	11	9	82.2
35	<u>15</u>	<u>11</u>	73.3

Total Eligible: 72 41
District Participation Rate 56.9%

Table 1 (Cont.)
Vocational Teacher Rate of Participation

Vocational Teacher Rate of Participation				
District	System	No. Programs in System	Returns	Percent Participation
<u>Southeast</u>				
	41	18	6	33.3
	42	4	4	100.0
	43	25	18	72.2
	44	10	10	100.0
	45	<u>13</u>	<u>10</u>	77.0
Total Eligible:		70	48	
		District Participation Rate 68.6%		
<u>South Central</u>				
	51	14	9	64.3
	52	15	11	73.3
	53	12	7	68.3
	54	14	14	100.0
	55	<u>16</u>	<u>11</u>	68.7
Total Eligible:		71	52	
		District Participation Rate 73.2%		
<u>Northwest</u>				
	61	9	8	88.9
	62	9	7	77.8
	63	20	7	65.0
	64	19	16	84.2
	65	<u>11</u>	<u>11</u>	100.0
Total Eligible:		68	49	
		District Participation Rate 72%		
<u>Southwest</u>				
	71	30	30	100.0
	72	17	11	64.7
	73	19	13	68.4
	74	15	15	100.0
	75	<u>9</u>	<u>9</u>	100.0
Total Eligible:		90	78	
		District Participation Rate 86.6%		
Total eligible programs:		587	Rate of participation:	71.7%
Total returns:		419		

Table 2 provides a breakdown of respondents for each vocational program area. Trade and Industrial and Home Economics teachers were the two largest respondent groups (27% and 20% respectively) and accounted for almost half of the total number of respondents.

Table 2
Number of Respondents by Program Area

Program Area	No. of Teachers	Percent
Trade and Industrial	112	27
Home Economics	85	20
Business Education	56	13
Agriculture	40	11
Industrial Arts	27	6
Marketing	27	6
VIP	25	6
Guidance/Administration	16	4
Health Occupations	14	3
Not specified	14	3
VAP	3	1
Total	419	100%

Personal/Demographic Information

The first part of the questionnaire sought to establish demographic data about the instructors who participated in the study. Of particular interest was the instructor's age, experience, and retirement plans. Tables 3, 4, and 5 summarize these personal data.

Table 3 indicates that over one-half of the vocational teachers are between 35 and 50 years of age, with nearly a quarter of them being in their early 40s. (See also Figure 1) There is further evidence of this level of experience in the data presented in Table 4 which indicated that about 60% of the teachers responding have been teaching for over ten years (see also Figure 2). However, it is interesting to note that the largest group of teachers (22%) has less than five years teaching experience.

There are extensive job opportunities for the skilled craftspersons to work either full-time or part-time in their field. This might explain in part the results of the data in Table 5 which show that 148 of 419 respondents (35.3%) plan to retire in less than six years (see also Figure 3). In that less than 5 percent are in their 60s, one would expect a smaller number who plan to retire in the near future.

Educational Level and Long-Range Goals

Tables 6 and 7 break down the highest educational level achieved by secondary vocational teachers as well as their long-range professional goals (See also Figure 4). Almost three fourths of the secondary vocational teachers currently hold at least a baccalaureate degree.

Table 6 summarizes degreed vocational teachers' long-range professional development goals. Secondary Health and T & I teachers were not included in this Table because the majority of this group did not hold a baccalaureate degree.

Table 3
Secondary Vocational Teachers by Age Group

Age	N	%
Less than 25	14	3.3
26-30	37	8.8
31-35	54	12.9
36-40	69	16.5
41-45	94	22.4
46-50	62	14.8
51-55	30	7.2
56-60	40	9.5
More than 60	19	4.5
Total	419	100.0

Table 4
Secondary Vocational Teachers Years of Teaching

Years of Teaching	N	%
Less than 5	92	22.0
6-10	75	17.9
11-15	90	21.5
16-20	76	18.1
21-25	46	11.0
26-30	23	5.5
More than 30	<u>17</u>	<u>4.1</u>
Total	419	100.0

Figure 1

Tennessee Vocational Teachers

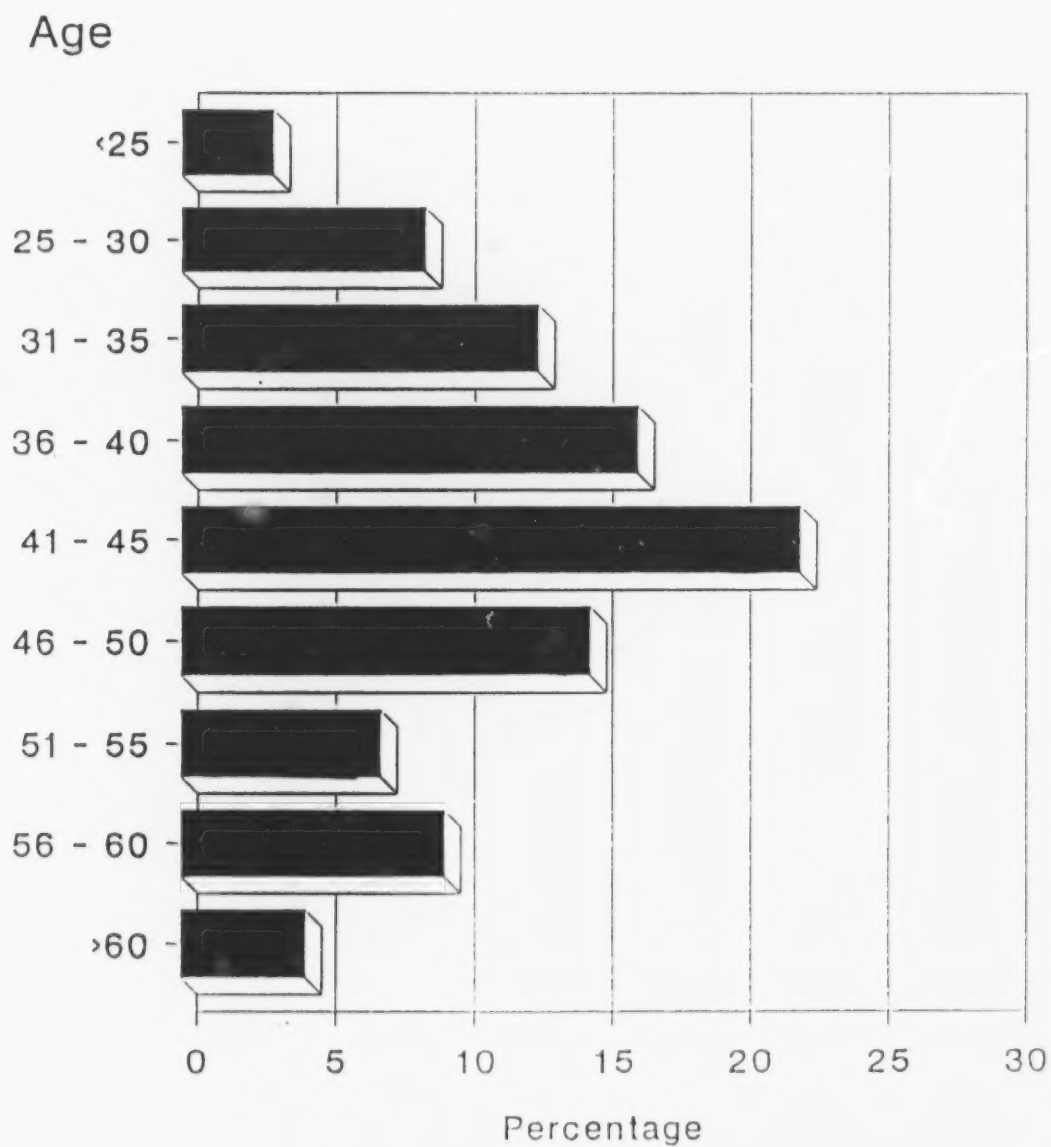


Table 5
Secondary Vocational Teachers Years to Retirement

Years to Retirement	N	%
Less than 6	148	35.3
6-10	55	13.1
11-15	66	15.8
16-20	57	13.6
21-25	52	12.4
26-30	32	7.6
More than 30	<u>9</u>	<u>2.1</u>
Total	419	100.0

Table 6
Degreed Teachers Long-Range Goals

Current Educational Level	Long-Range Professional Goals				
	N (%)	Maintain Cert.	M.S.	Beyond M.S.	Not Specified
B.S. Degree	126 (43%)	56 (44%)	54 (43%)	14 (11%)	2 (2%)
M.S. Degree	79 (27%)	39 (49%)	0 (0%)	33 (42%)	7 (9%)
Beyond M.S.	68 (23%)	28 (41%)	0 (0%)	34 (50%)	6 (9%)
Not Specified	20 (7%)	8 (4%)	0 (0%)	0 (0%)	12 (60%)
Totals	293 (100%)	131 (45%)	54 (18%)	81 (28%)	27 (9%)

Figure 2

Tennessee Vocational Teachers

Number of Years Teaching

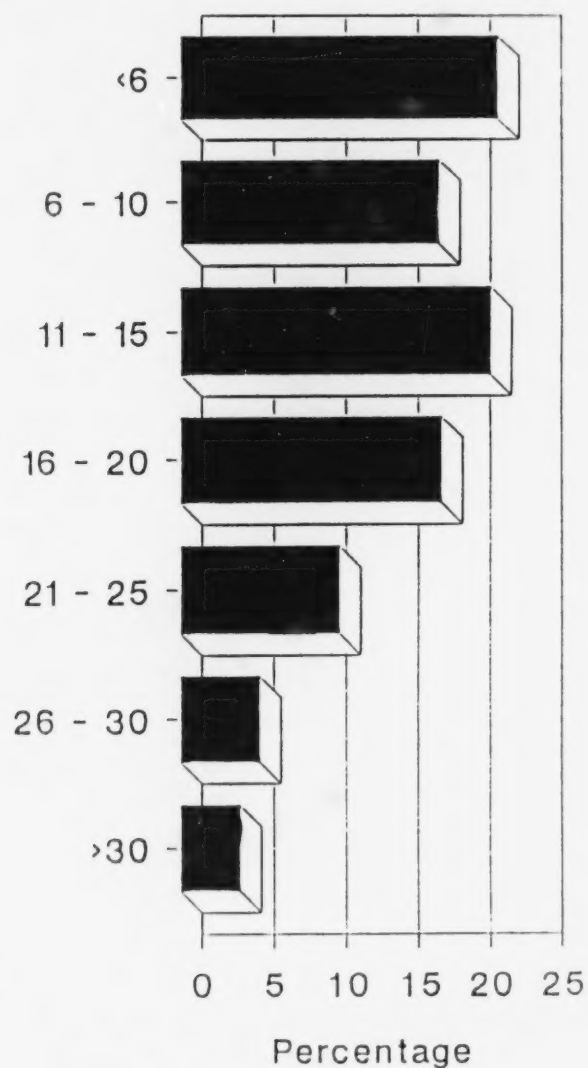


Figure 3

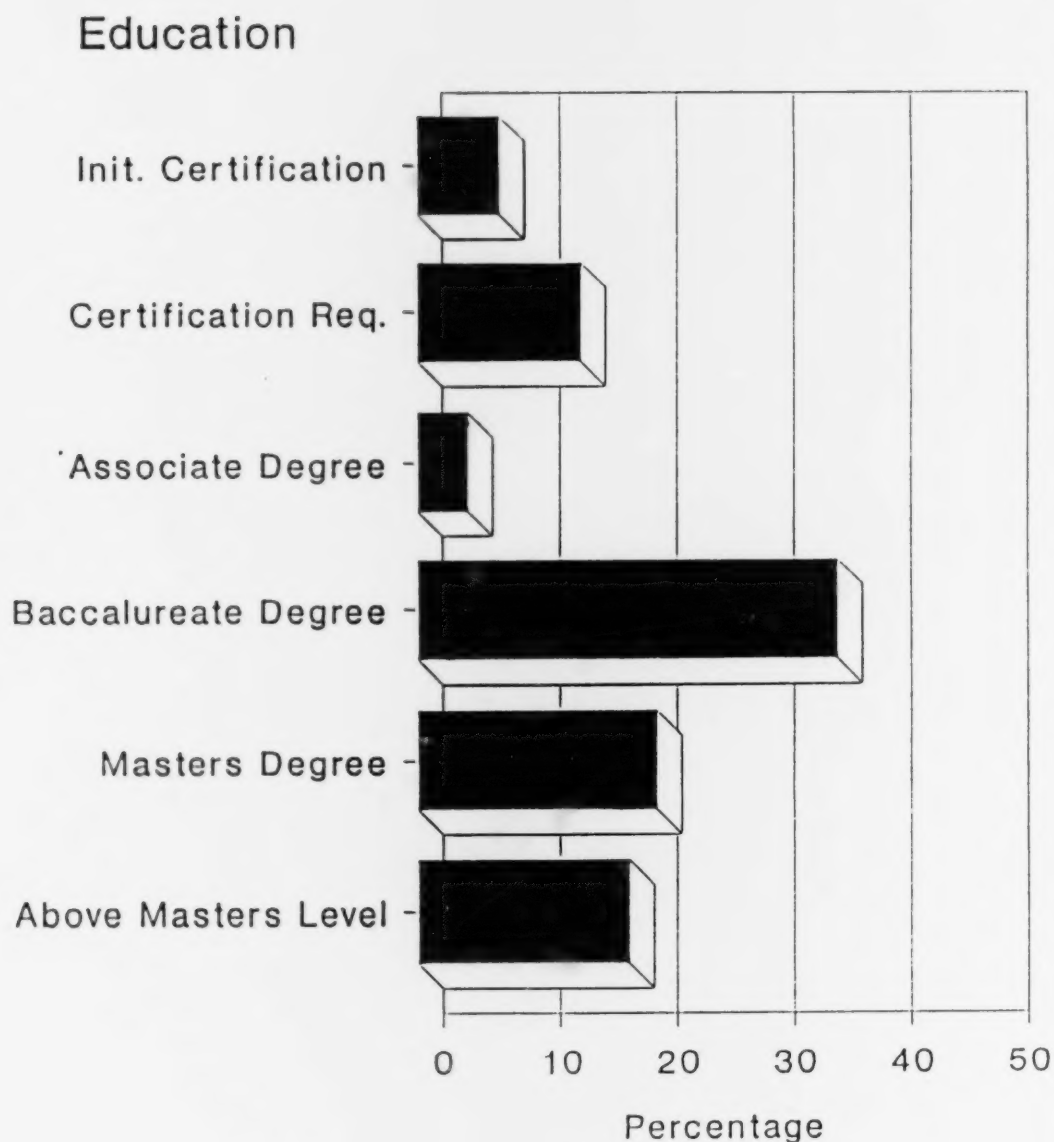
Tennessee Vocational Teachers

Years to Retirement



Figure 4

Tennessee Vocational Teachers



Better than half of the teachers who currently hold a baccalaureate degree plan on earning a masters degree or beyond (54%). Moreover, forty-two percent of those who currently hold masters degrees plan on continuing their professional development through further education.

Table 7 analyzes the current educational level and long range professional development goals of secondary Health and T & I teachers. Two-thirds of these teachers (68%) hold less than a baccalaureate degree

Table 7
T&I and Health Occupations Teachers Long Range Goals

Current Educational Level	Long Range Professional Goals						
	N (%)	Maintain Cert.	A.A.S.	B.S.	M.S.	Beyond M.S.	Not Specified
Working on Certification	22 (17%)	12 (55%)	5 (23%)	3 (14%)	0 (0%)	0 (0%)	2 (8%)
Met Certification	49 (38%)	37 (76%)	5 (10%)	3 (6%)	2 (4%)	2 (4%)	0 (0%)
A.A.S.	16 (13%)	6 (38%)	3 (19%)	4 (25%)	2 (13%)	0 (0%)	1 (5%)
B.S. Degree	22 (17%)	11 (50%)	0 (0%)	0 (0%)	9 (41%)	2 (9%)	0 (0%)
M.S. Degree	7 (6%)	2 (29%)	0 (0%)	0 (0%)	0 (0%)	4 (57%)	1 (14%)
Beyond M.S. Degree	8 (6%)	4 (50%)	0 (0%)	0 (0%)	0 (0%)	4 (50%)	0 (0%)
Not Specified	2 (2%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (100%)
Totals	126 (100%)	72 (57%)	13 (10%)	10 (8%)	13 (10%)	12 (10%)	6 (5%)

and the main long-range goal of this group generally was to maintain their certification to teach rather than to increase their educational credentials. Nevertheless, better than a third of this group do intend to work toward a baccalaureate degree or beyond. Then too, of those who currently hold at least a baccalaureate degree, better than half have plans to pursue further education. Figure 5 presents a composite of all secondary vocational teachers' long-range goals.

Teaching Assignment

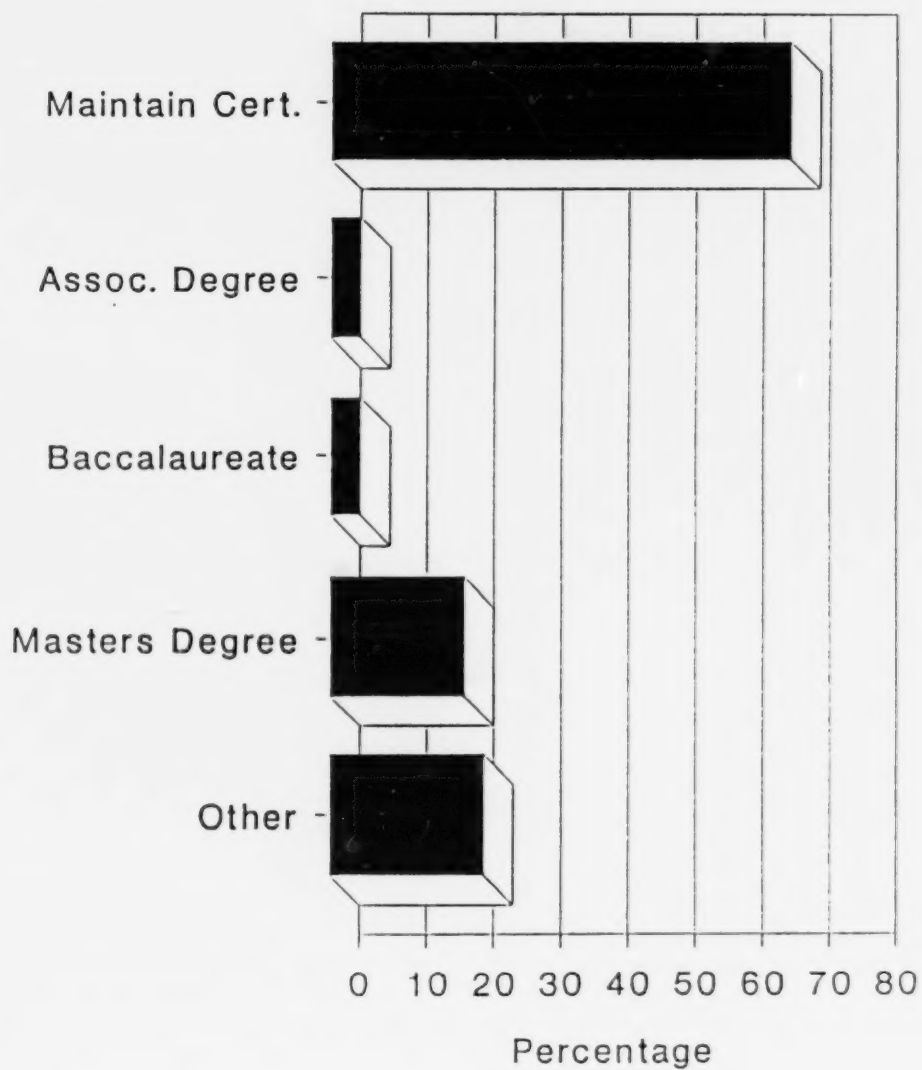
One focus of the study was the identification of the "typical" vocational teaching assignment. Table 8 reports secondary vocational teachers' work loads by program area, average number of male and female students, and average class size. Fifty-six percent of the students served by secondary vocational teachers were male and 46% were female. However, an analysis of the data revealed that with the exception of Marketing Education, vocational program areas have maintained their historic sexual stereotyping. Agriculture, T & I, and Industrial Arts continue to serve primarily males, while Home Economics, Business Education, and Health continue to serve primarily females. Average class sizes ranged from 11.6 for VAP programs to a high of 19.5 students in Agriculture programs.

Each vocational teacher also tended to work with approximately 20 handicapped and disadvantaged students per day. However, since better than one-third (38%) of the teachers provided no enrollment data on disadvantaged and almost one-half (46%) reported no data on handicapped students, these figures should be viewed with caution. It may be that these non-respondent teachers have no handicapped or disadvantaged students enrolled or it may be that they don't know whether they have such students.

Figure 5

Tennessee Vocational Teachers

Long-Range Goals



Our suspicion is that for many it is the latter, although no definitive information can be derived from the present data. It also should be noted that better than two-thirds of the disadvantaged and handicapped students served by VAP and VIP programs were male.

Table 8
Teaching Assignment, Enrollments and Average Class Size

Program Area	N (%)	Average Class Periods Per Day*	Male Students	Female Students	Total No. Students/ Teacher	Average Class Size
Agriculture	38 (11%)	5.44	92.29 (87%)	13.87 (13%)	106.16	19.51
Business Ed.	50 (14%)	5.38	21.34 (23%)	72.94 (77%)	94.28	17.52
Health	14 (4%)	5.62	8.00 (10%)	70.93 (90%)	78.93	14.04
Home Economics	74 (21%)	5.33	27.81 (28%)	71.69 (72%)	99.50	18.67
Marketing	23 (7%)	5.55	42.84 (44%)	56.39 (56%)	100.22	18.06
T&I	102 (29%)	5.51	80.58 (83%)	16.00 (17%)	96.58	17.53
Ind. Arts	25 (7%)	5.32	86.12 (84%)	16.40 (16%)	102.52	19.27
VIP	23 (6%)	5.45	44.61 (67%)	21.91 (33%)	66.52	12.21
VAP	3 (1%)	**	51.33 (81%)	12.00 (19%)	63.33	11.62
Totals	352 (100%)		455.91 (56%)	352.13 (44%)		

* For vocational teachers reporting 5 or more class periods/day.

**Insufficient data

- Average no. of handicapped students per teachers per day = 4.41 excluding VAP/VIP (N = 225 teacher responses)

- Average no. of disadvantaged students per teachers per day = 16.24 excluding VAP/VIP (N = 259 teacher responses)

Planning Periods

As Figure 6 indicates, better than one-fourth of the teachers responding have no free time during which to plan their instructional activities. Indeed, of those teachers indicating a change in instruction schedules during the past three years, a majority indicated the loss of such a planning period.

Working with Disadvantaged/Handicapped Students

Very few secondary vocational teachers have help in dealing with special students. Sixty-nine percent get no assistance in dealing with handicapped and 74% receive no help in dealing with disadvantaged students. These facts are shown graphically in Figures 7 and 8.

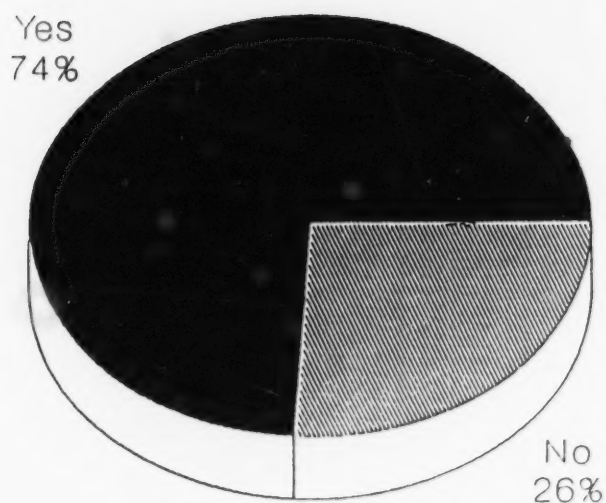
Instructional Schedule.

Consistent with the data indicating a high number of beginning students are the instructional schedules summarized in Figure 9. Nearly one-half of the teachers teach only exploratory one-hour sections. Figure 10 shows the current instructional schedule for all secondary vocational teachers.

An analysis of the instructional schedules of secondary T & I and Health teachers is presented in Table 9. It should be noted that better than 21% of all T & I and Health instructors time is spent teaching one-hour instructional blocks and 14% of these teachers were teaching only one-hour blocks. Moreover, three T & I instructors indicated that they had instructional schedules that mixed 1, 2, and 3-hour students throughout the instructional day. This latter finding represents an absolute instructional nightmare and is impossible to manage.

Figure 6

Tennessee Vocational Teachers Planning Period



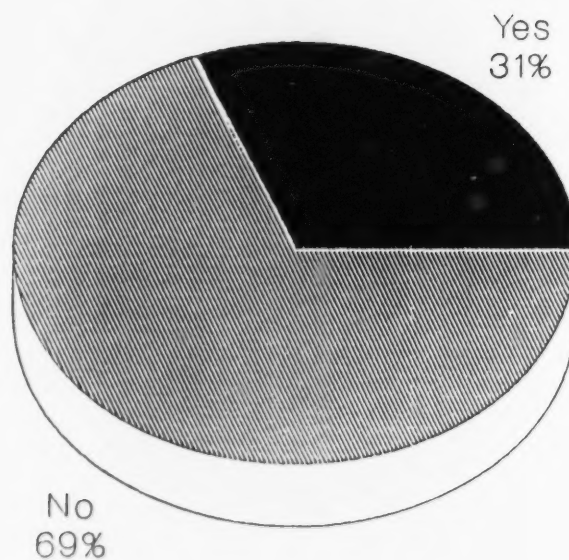
n=416

26

36

Figure 7

Tennessee Vocational Teachers Assistance with Handicapped

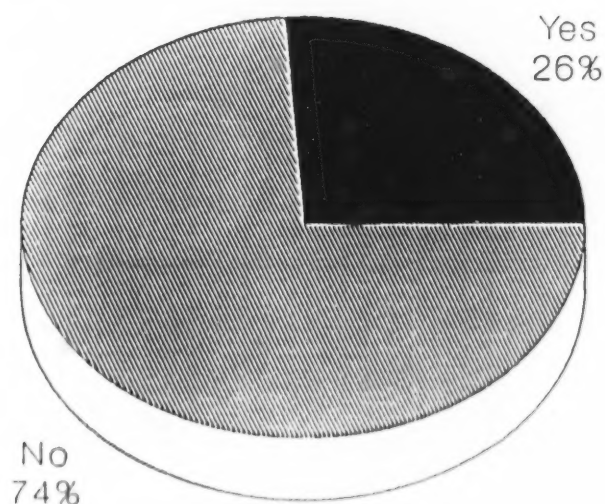


n=386

27

Figure 8

Tennessee Vocational Teachers Assistance with Disadvantaged



n=387

Figure 9

Tennessee Vocational Teachers

Type of Student

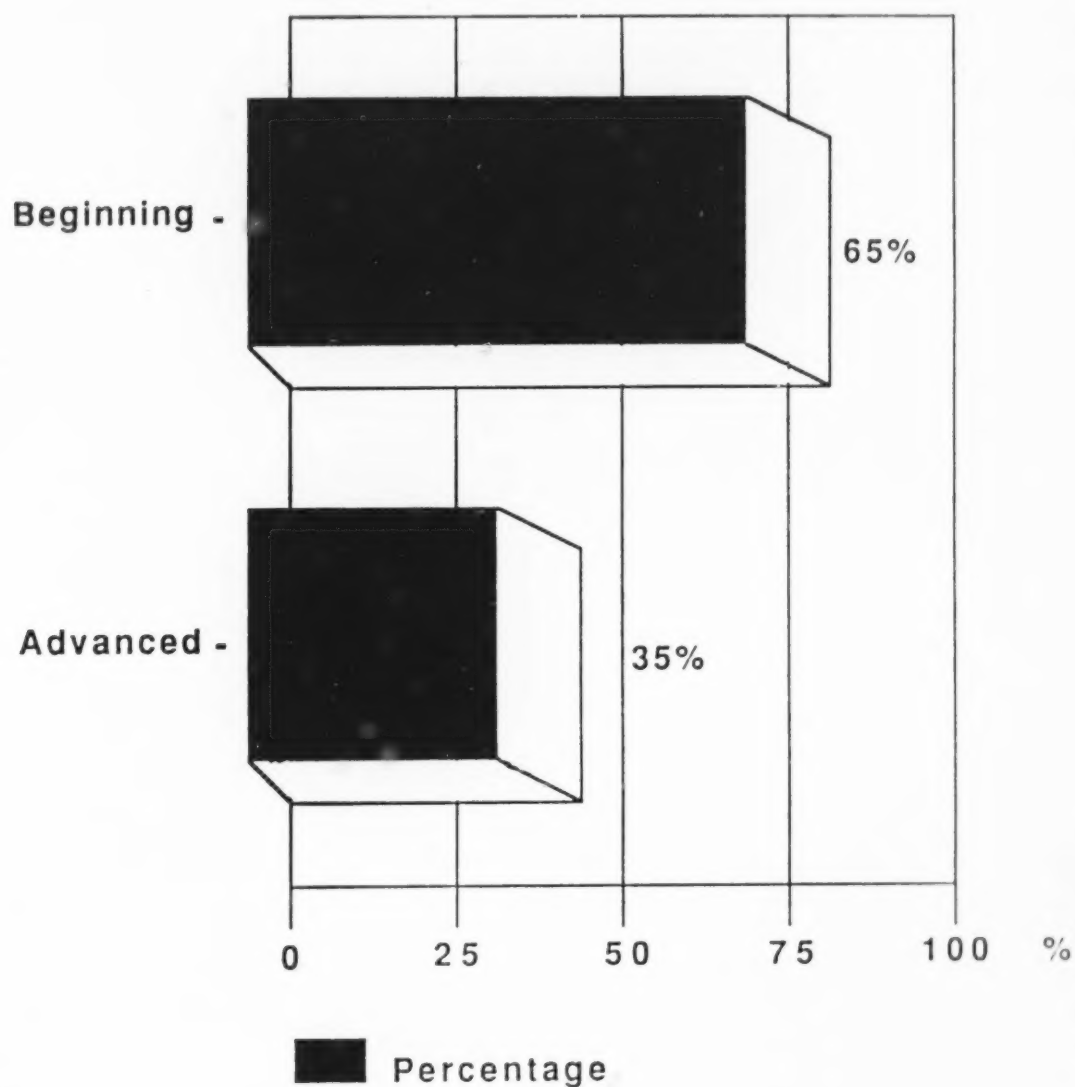
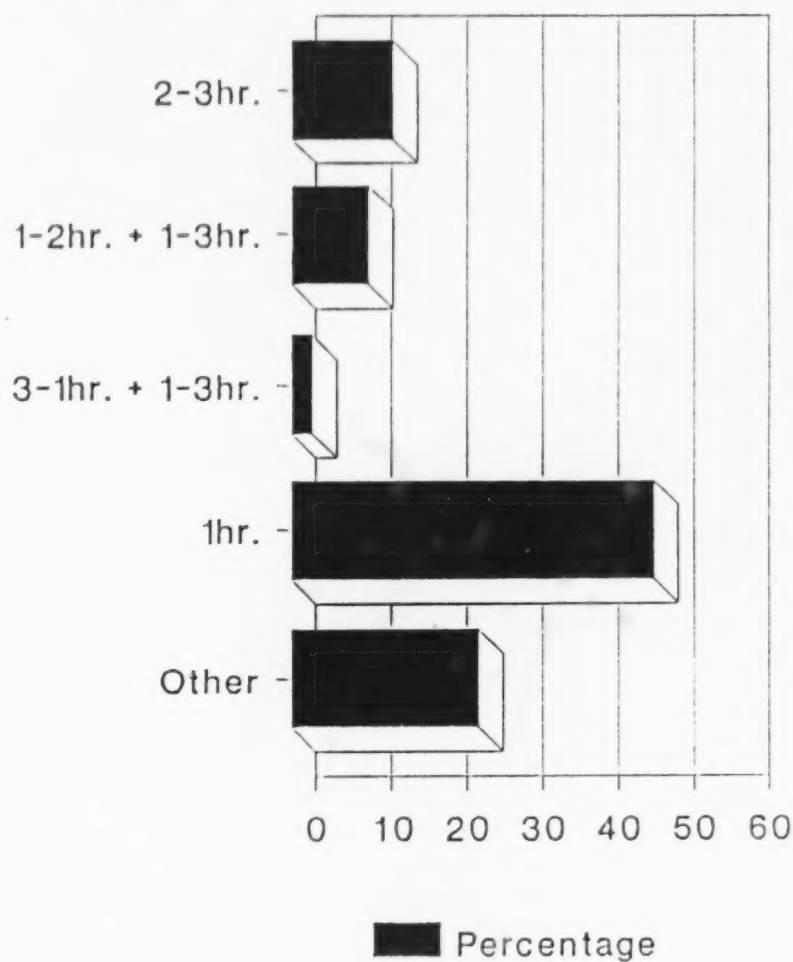


Figure 10

Tennessee Vocational Teachers

Instructional Schedule



n=416

Table 9
T&I and Health Teachers' Instructional Schedules

Instructional Schedule	N	Percent
(2) three-hour blocks	34	27
(1) two-hour block; (1) three-hour block	26	21
(2) two-hour blocks; (1) one-hour block	18	15
All one-hour blocks	17	14
(2) one-hour blocks; (1) three-hour block	10	8
(3) one-hour blocks; (1) three-hour block	8	6
(1) one hour; (1) two-hour; (1) three hour block	5	4
(2) two-hour blocks; (2) one-hour blocks	3	2
Mixed (in any given period, students may be enrolled as 1, 2, or 3 hour students)	3	2
(3) two-hour blocks	1	1
(3) one-hour blocks; (1) two-hour block	1	1
Totals	124	100%

Skills Inventory

Individuals were asked to rate each of 19 skills that they felt would be the most beneficial to improving their teaching performances. These skills were identified from the review of literature. Secondary vocational teachers were asked to rate the skills on a scale indicating most beneficial (5) to least beneficial (1). Space also was provided on the questionnaire for other skills to be added which the participants felt would provide a positive impact on their teaching performance.

Of the five highest rated variables, three dealt with the "human relations" aspects of the teachers' jobs. The variable that the participants felt would be the most beneficial to improving their teaching was Motivating/Disciplining Students. Also in the top five were Assessing Student Interests and Helping Students with Career Development. As might be predicted, Updating Technical Skills in Specialty Area and Developing

Computer Skills were the other "top five" variables. Table 10 shows the breakdown of the responses to each of the 19 variables in rank order of importance.

Table 10
Skills Inventory Response Analysis

Rank	Variable	Least Beneficial			Most Beneficial		Total N (Mean Rating)
		1	2	3	4	5	
1	Motivating/ disciplining students	10 (2.51)	29 (7.27)	72 (18.05)	109 (27.32)	179 (44.86)	399 (4.03)
2	Updating technical skills in specialty area	22 (5.61)	15 (3.83)	67 (17.09)	116 (29.59)	172 (43.88)	392 (4.02)
3	Helping students with career development	6 (1.52)	23 (5.84)	82 (20.81)	156 (39.59)	127 (32.23)	394 (3.93)
4	Developing computer skills	34 (8.61)	29 (7.34)	68 (17.22)	115 (29.11)	149 (37.72)	395 (3.77)
5	Assessing student interest	13 (3.29)	28 (7.09)	119 (30.13)	132 (33.42)	103 (26.08)	395 (3.72)
6	Guidance/counseling skills	22 (5.57)	38 (9.62)	107 (27.09)	112 (28.35)	116 (29.37)	395 (3.66)
7	Planning/managing multiple lab activities	33 (8.46)	31 (7.95)	81 (20.77)	126 (32.31)	119 (30.51)	390 (3.66)
8	Evaluating student progress	16 (4.05)	34 (8.61)	123 (31.14)	154 (38.99)	68 (17.22)	395 (3.56)
9	Developing curriculum - building skills	27 (6.85)	30 (7.61)	137 (34.77)	120 (30.46)	80 (20.30)	394 (3.49)
10	Assessing personal skills	21 (5.32)	34 (8.61)	141 (35.70)	137 (34.68)	62 (15.70)	395 (3.45)
11	Developing/using audio-visual aids	31 (7.83)	39 (9.85)	136 (34.34)	114 (28.79)	76 (19.19)	396 (3.40)
12	Developing management/ entrepreneurship skills	37 (9.49)	40 (10.26)	139 (35.64)	104 (26.67)	70 (17.95)	390 (3.33)
13	Using advisory committees effectively	35 (8.91)	44 (11.20)	136 (34.61)	113 (28.75)	65 (16.54)	393 (3.32)

Table 10 (Cont.)
Skills Inventory Response Analysis

Rank	Variable	<u>Least Beneficial</u>			<u>Most Beneficial</u>		Total N (Mean Rating)
		1	2	3	4	5	
14	Student placement and follow-up	51 (13.08)	48 (12.31)	118 (30.26)	113 (28.97)	60 (15.38)	390 (3.30)
15	Developing youth organizations	50 (12.69)	41 (10.41)	122 (30.96)	106 (26.90)	75 (19.04)	394 (3.29)
16	Shop safety and first aid	68 (17.30)	55 (13.99)	93 (23.66)	68 (17.30)	109 (27.74)	393 (3.26)
17	Program evaluation	31 (7.95)	50 (12.82)	160 (41.03)	101 (25.90)	48 (12.31)	390 (3.20)
18	Working with the handicapped or disadvantaged	47 (12.05)	51 (13.08)	142 (36.41)	90 (23.08)	60 (15.38)	390 (3.15)
19	Co-oping students	94 (24.10)	46 (11.79)	91 (23.3)	91 (23.33)	67 (17.18)	390 (2.97)

Teaching Basic Skills in Subject Matter

The integration of basic skills such as mathematics, technical writing, science, reading, and computer applications into course content has received a great deal of attention recently. This section dealt with the participating instructors' perceptions of how the integration of each of these skills would improve their teaching performance. The results are provided in Table 11.

While each variable except Integrating Science Content had ratings in excess of "3", Integrating Reading had the highest rating (3.92). However, further analysis is needed in this area. For the moment, the assumption is that the perceived importance of these basic skills is a function of the

subject matter being taught. For example, typing teachers may see no need for integrating science content into their programs while science would be absolutely mandatory in other courses of study. A reasonable assumption in the data provided in this report could be that Integrating Reading is the only common variable across curricula. Consequently, it received the highest rating.

Table 11
Teaching Basic Skills Within Subject Matter

Rank	Variable	<u>Least Beneficial</u>			<u>Most Beneficial</u>		Total N (Mean Rating)
		1	2	3	4	5	
1	Integrating reading	23 (5.9%)	10 (2.6%)	97 (24.9%)	104 (26.7%)	155 (39.9%)	389 (3.9%)
2	Integrating computer applications	37 (9.5%)	20 (5.2%)	83 (21.4%)	98 (25.3%)	150 (38.7%)	388 (3.8%)
3	Integrating mathematics into curriculum	27 (6.9%)	33 (8.5%)	101 (26.2%)	121 (31.4%)	104 (26.9%)	386 (3.6%)
4	Integrating technical writing	51 (13.4%)	49 (12.9%)	149 (39.2%)	88 (23.2%)	43 (11.3%)	380 (3.1%)
5	Integrating science content	71 (18.6%)	61 (16.0%)	132 (34.7%)	71 (18.6%)	46 (12.1%)	381 (2.9%)

Professional Development

This section of the study dealt with such matters as continuing education through coursework, seminars, and visitations. Specific personal development activities were also provided and the participants were asked to evaluate each on a one to five scale, showing the most to the least beneficial.

A great number of the instructors attended professional events as shown in Figure 11. Almost everyone attended In-Service training and over one-half participated in workshops and professional meetings.

Table 12 summarizes personal development activities perceived to be important to teaching performance. While each activity was seen as relatively beneficial, Paid Employment for Upgrading Technical Skills, and Nearby On-Campus Seminars/Workshops were seen as the most important personal development activities.

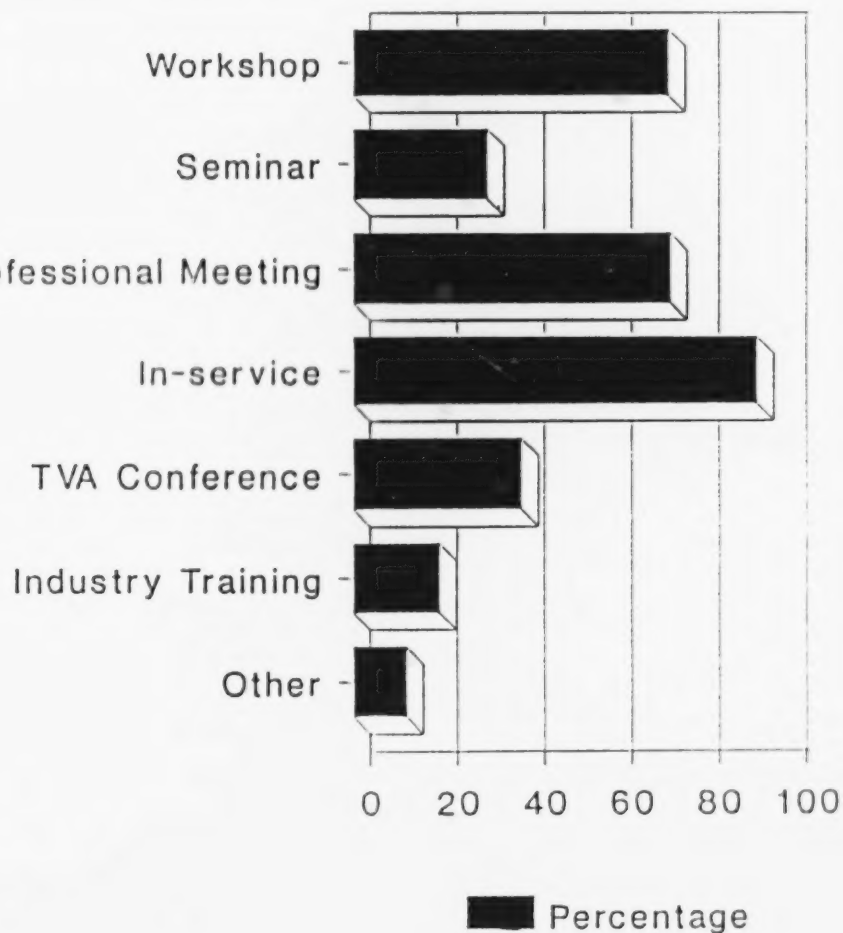
Table 12
Personal Development Activities

Activity	N	Mean	Standard Deviation
Nearby high school or university conference/ meeting	397	3.64	1.14
Business/Community in-service (offered at no cost)	399	3.91	1.07
Nearby on-campus seminar/workshops	402	4.00	0.92
Conventional college coursework	397	3.18	1.21
Extension courses	396	3.14	1.22
Paid employment for upgrading technical skills	395	4.07	1.11

Figure 11

Tennessee Vocational Teachers Attended in Past Year

Professional Events

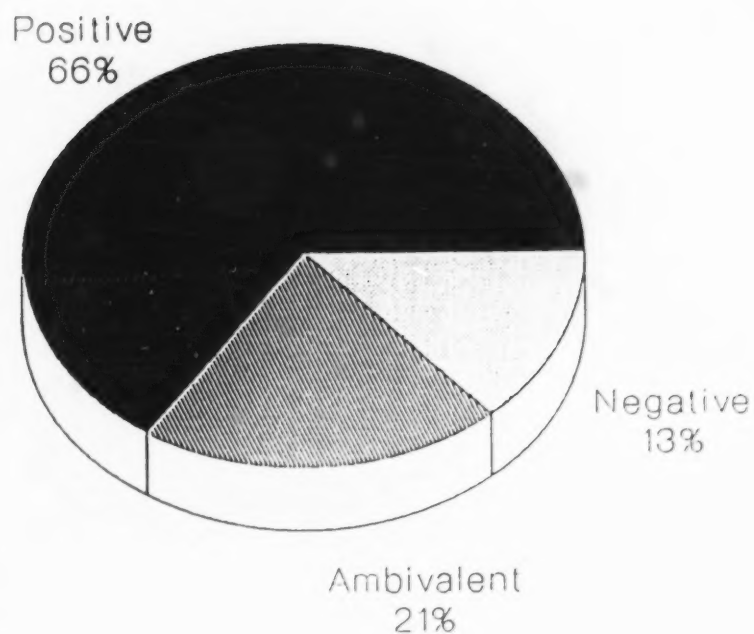


Curriculum Guides

Items specific to the curriculum guides were also included in this section. The guides were seen as a positive factor to about two-thirds of the respondents (see Figure 12). The data indicated that the guides had seen heavy use. Only 13% of the respondents were negative in their reaction to the curriculum guides.

Figure 12

Tennessee Vocational Teachers Assessment of Guide



n=326

CONCLUSIONS, RECOMMENDATIONS AND DISCUSSION

This study has established the essential characteristics of a strategy for improving vocational education over the next five years by defining the current structure of programs within the state. There is a critical need for intervention given the nature and dimensions of the technology and information explosion and its effect on the operation of vocational education at the secondary level. Successful innovation will depend on an operational and policy framework which is supportive of the desired change(s). The following conclusions and recommendations should provide some general and specific targets for the system:

Conclusion:

Only 14% of the vocational teachers were over 55 years old and less than 5% were over 60 years old, yet 35% plan to retire within the next 5 years.

Recommendation:

A study should be initiated to determine why such a high percentage of secondary vocational teachers plan to leave the profession prematurely. It may be that teacher morale is low and frustration levels are high or it may be that non-teaching employment opportunities continue to lure vocational teachers away from the profession. No definitive data emerged from the present study which might shed light on this question.

Conclusion:

Better than one fourth of the teachers have no planning period, a proportion that has been on the increase during the last three years.

Recommendation:

It would seem self-evident that quality instruction requires planning. Therefore, it is imperative that all secondary vocational teachers have a daily planning period. The rhetoric of reform predicates excellence in vocational education designed by teachers who must be involved with facility maintenance, curriculum development, budget preparation, advisory committees, placement and follow up of students, and a myriad of other tasks in addition to their teaching responsibilities. However, as these teachers are being asked to fulfill this promise, they are

assigned less time to combine the effective strategies for implementing the new delivery systems. The very foundation of quality vocational instruction will be threatened if this trend is allowed to continue.

Conclusion:

This study indicated that sizable numbers of handicapped and disadvantaged students were being served by vocational education programs in secondary settings. Unsolicited comments by respondents indicated that teachers were not informed when these special populations were placed in their classrooms.

Recommendation:

Further study is indicated in this area, particularly to determine just how many disadvantaged and handicapped students are being served by secondary vocational teachers, and what problems, if any, this may be creating for the vocational teacher.

Conclusion:

Teachers have little or no assistance in dealing with handicapped or disadvantaged students.

Recommendation:

Training programs for addressing the special needs of handicapped and/or economically disadvantaged students should be required for all secondary vocational teachers and administrators if these individuals are to be recruited and dealt with equitably. A student with special needs should never be simply left in a vocational program with no purpose or identified goal, and, clearly, the teacher should be advised if such a student has been assigned to his/her care. Common planning grounds should be explored and required between guidance counselors and teachers concerning handicapped and disadvantaged students. Appropriate learning environments must be established and vocational teachers must become skilled in utilizing a variety of instructional strategies to accommodate special learners in integrated vocational classes. Supplying aides to assist in these endeavors is crucial. Moreover, secondary vocational teachers, who are expected to instruct handicapped and/or disadvantaged students, must be involved in the development of Individualized Educational Plans (IEP's) in order to identify the vocational deficiencies of students.

Conclusion:

Nearly one-half of the teachers at the secondary institutions surveyed are teaching one-hour instructional programs only. While one might expect to find this with Home Economics programs or Industrial Arts programs, it was also found to be the case in better than 21% of the T & I and Health programs.

Recommendation:

These one-hour instructional programs are designed to provide students with a broad exposure to an entire craft/skill. In the case of Home Economics or Industrial Arts, this delivery system probably works well. But in the case of T&I and Health Occupations programs, several negative factors emanate from this practice.

- (a) If the focus of T&I and Health Occupations programs is merely exploratory, many of these teachers are ill prepared to teach in this environment and many vocational facilities are improperly equipped. Trade and Industrial (T&I) teacher preparation and, to a lesser extent Health teachers' preparation is mainly attained through occupational experience and traditionally lacks pedagogical preparation. Non-degreed T&I and Health instructors are least prepared to teach one-hour exploratory courses requiring increased classroom instructional skills and entirely different laboratory management skills. Therefore, systems must place heavy emphasis on continued professional development to upgrade these teachers both pedagogically and technically or employ a different type of teacher.
- (b) One hour T&I and Health Occupations programs are not designed to prepare students for the job market. This fact alone will require that different criteria be used to evaluate the effectiveness of such vocational programs.
- (c) Moreover, T&I and Health Occupations programs must never be reduced to merely "exploring" the nature of occupations and work at the high school level. This should be accomplished prior to entry into high school. Job preparation must remain a viable option for vocational students. Therefore, no T&I or Health Occupations program which purports to train students for the job market should be allowed to exist unless an adequate amount of time is devoted to such training through advanced course offerings. No exploratory program should exist without its job-preparatory counterpart also being made available.

Based on these observations, the following recommendations are made:

- 1. Clarify the purpose or purposes of secondary vocational education.
- 2. Teachers' initial certification should prepare them for the type of teaching expected of them at the local system level.
- 3. Explore different certification requirements for different teacher expectations.
- 4. Different levels of funding should be examined to reflect the differential costs of operating job preparatory laboratory courses versus exploratory courses.

5. Program Evaluation criteria need to be examined and clarified for exploratory versus job preparatory courses.

Conclusion:

Of the five highest rated variables that should improve teacher performance in the classroom, three dealt with human relations aspects of the job such as motivating/disciplining students, assessing student interest, and helping with career development.

Recommendation:

In-service education should emphasize the human side of the teacher's job, stressing important interaction skills.

Conclusion:

Updating technical skills in the subject area and developing computer skills were two of the top five variables seen as important to improving teaching performance.

Recommendation:

The requirement that the updating of technical skills be mandatory for recertification of vocational-technical should be explored.

Conclusion:

Skills that provide a positive impact on vocational teaching ability were identified by the participants.

Recommendation:

Carefully explore all items in Tables 10 and 11 for possible inclusion of these skills in in-service or other professional development activities.

Conclusion:

Even though integrating Reading was perceived to be the most important basic skill to be taught within vocational subject matter, this finding was a general one and should be related to specific subject areas.

Recommendation:

Secondary vocational teachers have not been professionally prepared to be the teacher to initiate the acquisition of basic skills. Many vocational teachers have not taken pre-service courses or participated in in-service programs for the purpose of integrating basic skills into their existing curriculum.

Therefore, if vocational teachers are to be expected to teach basic academic skills, professional teacher certification and in-service programs should include basic skill integration and teaching to reinforce the basic skills for secondary vocational teachers.

Conclusion:

Participation level in professional events by the instructors is high, particularly for in-service training as well as workshops and professional meetings.

Recommendation:

Continue requirements for participation in such events as well as the funding for this participation.

Conclusion:

Nearby on-campus seminars/workshops were seen as the most important personal development activity.

Recommendation:

Funding should be increased to permit the scheduling of such events which would be more economical than other approaches.

Conclusion:

The curriculum guides received heavy usage and were seen as a positive factor in improving instruction by a majority of the secondary vocational teachers. Only 13% of the teachers were negative in their assessment of the curriculum guides. Those responding negatively expressed concerns of the following sort: One curriculum guide was cited as being a poor example of that particular field. The document was said to have both typographical, clerical, and grammatical errors which were distracting and unprofessional. Vocational teachers in a second area stated that the new curriculum guide was not as effective as the old one. Likewise, negative responses stemmed from inadequate training of teachers regarding how the curriculum guides should be used. Trade and Industrial teachers in particular stressed a need for more assistance in using the Guides.

Recommendation:

Curriculum guides should be reviewed and updated periodically for typographical and grammatical errors, and in order to insure that they remain current with the changing technology. Refinement of these documents should be completed before sending them to secondary institutions or before exchanging them with other states.

Providing inservice workshops especially for T&I teachers who are having problems utilizing the guides would help eliminate this problem. Finally, all new teachers should be given assistance in learning how to utilize the new curriculum guides.

CONCLUDING REMARKS

The concept for a strategic plan allowing structured learning experiences with technological orientation in vocational education must be emphasized. This study was conducted with the intent of identifying the specific needs of vocational teachers in order to plan for the future. The results have provided a data base for the first component of the improvement process--the plan to plan--based on the vocational teacher's experiences and expression of preferences. It is now up to the state of Tennessee to determine the choice of strategies to provide quality secondary vocational programs with identifiable desired results to the residents of this state.

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